

**IN THE SPECIFICATION**

Please amend the specification as follows:

Please add the following section:

**CROSS REFERENCE TO  
RELATED APPLICATIONS**

This is a continuation of pending serial number 09/651,757 filed August 30, 2000.

**IN THE CLAIMS**

Please amend the claims as follows:

1. (Currently Amended) A self-contained programmable electronic radio system multifunction slice comprising:
  - an antenna interface;
  - a plurality of bi-directional transceivers;
  - a programmable processor coupled to said plurality of bi-directional transceivers and operable to support at least two independent radio function threads through said plurality of bi-directional transceivers; and
  - a avionics interface including a avionics network input for receiving first data to be transmitted through the transceivers and a avionics network output for second data received from the transceivers.
2. (Original) The electronic radio system multifunction slice of claim 1, wherein said processor is operable to perform a digital signal processing function selected

from the group consisting of modulation, demodulation, encoding/decoding, detection, encryption and decryption.

3. (Original) The electronic radio system multifunction slice of claim 1, wherein said at least two radio function threads support radio functions selected from the group consisting of communication, navigation, interrogation, and surveillance.

4. (Original) The electronic radio system multifunction slice of claim 1, wherein said at least two radio function threads support radio functions selected from the group consisting of voice radio communication, data network communication, electronic navigation aids, radio beacon detection, global and local grid positioning system detection, and friend-or-foe identification challenging and responding.

5. (Original) The electronic radio system multifunction slice of claim 1, wherein said antenna interface couples externally the multifunction slice to a plurality of antenna preconditioning units.

6. (Currently Amended) A multifunction electronic radio system comprising:  
a plurality of antenna interfaces; and  
a plurality of electronic radio system multifunction slices, wherein each of said plurality of electronic radio system multifunction slices comprises:

an antenna interface;

a plurality of transceivers coupled to said antenna interface; and

a programmable processor, said processor coupled to said plurality of transceivers and operable to support radio function threads through said plurality of transceivers; and

wherein the plurality of multifunction slices implements a predetermined set of radio functions,

wherein at least one of said transceivers is interconnected to a plurality of said plurality of antenna interfaces.

7. (Original) The multifunction electronic radio system of claim 6, further comprising a plurality of antennas, each of said antennas being coupled to an antenna preconditioner.

8. (Original) The multifunction electronic radio system of claim 7 wherein each of said antenna preconditioners is coupled to at least one of said electronic radio system multifunction slices.

9. (Original) The multifunction electronic radio system of claim 6, further comprising an avionics interface that provides first data for transmission to the processor and that accepts second data received by the transceivers.

10. (Currently Amended) The multifunction electronic radio system ~~comprising~~ of claim 6, wherein at least two of said electronic radio system multifunction slices are interconnected through a radio network bus ~~isolated~~ electrically isolated from the transceivers.

11. (Currently Amended) A method of implementing a multifunction electronic radio system, the method comprising:

determining a set of radio functions to be performed by said multifunction electronic radio system;

assigning the radio functions in said set of radio functions across a plurality of electronic radio system multifunction slices that each include:

an antenna interface;

a plurality of transceivers;

a programmable processor coupled to said plurality of transceivers and operable to support at least two radio function threads through said plurality of multi-band transceivers; and

an avionics interface, said avionics interface providing avionics input and output;

interconnecting the antenna interfaces of said plurality of electronic radio system multifunction slices to a plurality of antenna preconditioners; and

coupling the avionics interfaces of said plurality of electronic radio system multifunction slices to a avionics network.

12. (Original) The method of claim 11, further comprising the step of configuring the processor for encryption and decryption functions.

13. (Original) The method of claim 11, wherein the step of assigning further comprises assigning the radio functions in accordance with resource assets required by the radio functions.

14. (Original) The method of claim 13, wherein the step of assigning further comprises assigning the radio function is in accordance with antenna, transceiver, and processor resource asserts required by the radio functions.

15. (Original) The method of claim 11, further comprising the step of determining mission segments and mission segment radio functions, and wherein the set of radio functions includes the mission segment radio functions.

16. (New) A multifunction aircraft radio system, said system comprising:  
a plurality of identical multifunction radio slices for implementing radio functions, said plurality of multifunction radio slices programmable for a plurality of radio functions;

a plurality of antennas for transmitting and receiving signals, said plurality of antennas switchably coupled to said plurality of multifunction radio slices; and

an avionics network for delivering information between said aircraft radio system and aircraft avionics, said avionics network switchably coupled to said plurality of multifunction radio slices.

17. (New) The system of claim 16, wherein each of said plurality of multifunction radio slices further comprises:

an antenna interface;

a transceiver coupled to said antenna interface; and

a programmable processor, said processor coupled to said transceiver and operable to support radio function threads using said transceiver.

18. (New) The system of claim 16, further comprising a master processor for selecting and interconnecting said plurality of multifunction radio slices to support a plurality of radio functions.

19. (New) The system of claim 16, wherein said plurality of multifunction radio slices may be reprogrammed in real time to accommodate a plurality of radio functions.

20. (New) The system of claim 16, wherein said plurality of radio functions may be implemented using a minimal allocation of said plurality of multifunction radio slices.